

Conducting Cnc Milling Operations Risk Assessment

Business Name:	ABN:	
Business Address:		
Contact Person:	Phone:	Email:

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THIS PROJECT

Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.

Full Name:		
Signature:	Title:	Date:

CLIENT OR PRINCIPAL CONTRACTOR DETAILS

Client:	SCOPE OF WORKS
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION	HIERARCHY OF CONTROLS
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE			Elimination Remove the hazard.
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	Substitution Replace the hazard.
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Review before work starts.	Isolation Isolate People from the hazard
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	2M MODERATE	Ensure control measures in place.	Engineering Isolate the hazard
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1L LOW	Monitor and keep records.	Administrative Change
								PPE

Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. Eliminate the hazard or redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or higher-level authorisation is required.
3H	Review and approve additional controls before task starts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures. Monitor and keep records.

Consequence Scale:

Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	No injury	no schedule impact	Deviation caught and corrected on site

Notes on Hierarchy of Controls:

Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. **Substitute**
3. **Isolate**
4. **Engineering**
5. **Administrative**
6. **PPE**

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

aligned with Safe Work Australia's Managing the risk of fatigue at work (2023) and ISO 45001:2018 clauses 6–8.

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. Preparation	Loose clothing, Inadequate tooling	3H	<ul style="list-style-type: none"> - Wear appropriate tight-fitting clothing - Conduct pre-operational checklist of tools - Ensure all tools are correctly adjusted before operation - Verify machine settings with job specification - Perform a visual inspection of the work area for hazards - Ensure paths are clear for emergency evacuation - Establish a safe exclusion zone around the machine - Train staff on the use of personal protective equipment (PPE) - Conduct a safety briefing before commencing work - Document all preparation steps in work log 	2M
2. Material Handling	Back strain, Dropped materials	3H	<ul style="list-style-type: none"> - Use mechanical aids for lifting heavy materials - Implement team lifting techniques for bulky items - Ensure walkways are clear to prevent trips and slips - Conduct lifting training for personnel involved - Store materials securely when not in use - Use appropriate tools to handle sharp materials - Ensure hands are clear of pinch points - Wear appropriate gloves for material handling - Assess input stock for damage before use - Use barriers to contain dropped material risk 	1L
3. Loading Material on CNC	Crushed fingers, Slips and trips	3H	<ul style="list-style-type: none"> - Use appropriate jigs and fixtures for material loading - Engage machine guards during loading - Wear safety footwear to prevent slips and trips - Keep the floor clean and dry - Train operators in safe material positioning - Ensure hands are kept clear of moving parts - Securely fasten materials to avoid movement during milling - Implement lockout/tagout procedures when necessary 	2M

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			<ul style="list-style-type: none"> - Use non-slip mats around the machine - Provide visible safety signage around the work area 	
4. Setting Machine Parameters	Wrong parameter settings, Electrical risks	3H	<ul style="list-style-type: none"> - Read the manual carefully - Check the parameter settings before starting the machine - Ensure the machine is properly grounded - Use the correct tools and equipment - Avoid touching the machine while it is running - Keep the work area clean and free of clutter - Use the correct safety procedures - Follow the manufacturer's instructions - Use the correct safety gear - Avoid distractions while working - Keep the machine in good condition - Regularly inspect the machine for damage - Use the correct safety procedures - Follow the manufacturer's instructions - Use the correct safety gear - Avoid distractions while working - Keep the machine in good condition - Regularly inspect the machine for damage 	2M
5. Tool Change	Sharp edges, Pin points	3H	<ul style="list-style-type: none"> - Use the correct tool for the job - Check the tool for damage before use - Use the correct safety procedures - Follow the manufacturer's instructions - Use the correct safety gear - Avoid distractions while working - Keep the machine in good condition - Regularly inspect the machine for damage 	2M
6. Machine Operation	Flying debris, Noise	4A	<ul style="list-style-type: none"> - Use the correct safety gear - Avoid distractions while working - Keep the machine in good condition - Regularly inspect the machine for damage 	2M

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7. Monitoring Operations	Operator fatigue, Overheating equipment	3H		1L
8. Adjustments	Misadjustment, Burn	3H		1L
9. Shutting Down Machine	Residual power, Slips	2M		1L

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10. Maintenance	Unexpected start-up, Chemical exposure	4A		2M
11. Cleaning	Chemical exposure, Cuts	3H		1L
12. Emergency Response	Inadequate response, Panic	4A		2M

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13. Reporting and Documentation	Missing reporting, Inconsistent documentation	2M		1L
14. Training	Outdated training, Inadequate instruction	3H		1L
15. Waste Disposal	Contamination, Improper handling	3H		1L

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16. Quality Control	Product defects, Rework incidents	3H	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	1L
17. Machine Downtime Management	Unplanned downtime, Inefficient scheduling	2M	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	1L
18. Ergonomic Assessment	Postural strain, Repetitive stress injuries	3H	<div></div> <div></div> <div></div>	1L

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SAMPLE

EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES IF ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory

Work Health and Safety Act 2011

Work Health and Safety Regulations 2011

Legislation QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws>

Codes of Practice QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice>

Legislation ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations>

Codes of Practice ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice>

Victoria

Occupational Health and Safety Act 2004

Occupational Health and Safety Regulations 2017

Legislation VIC: <https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations>

Codes of Practice VIC: <https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice>

New South Wales

Work Health and Safety Act 2011

Work Health and Safety Regulations 2017

Legislation NSW: <https://www.safework.nsw.gov.au/legal-obligations/legislation>

Codes of Practice NSW: <https://www.safework.nsw.gov.au/resource-library/list-codes-of-practice>

Western Australia

Work Health and Safety Act 2020

Work Health and Safety Regulations 2022

Legislation Western Australia: <https://www.commerce.wa.gov.au/worksafe/legislation>

Codes of Practice WA: <https://www.commerce.wa.gov.au/worksafe/codes-practice>

Northern Territory

Work Health and Safety (National Uniform Legislation) Act 2011

Work Health and Safety (National Uniform Legislation) Regulations 2011

Legislation NT: <https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws>

Codes of Practice NT: <https://worksafe.nt.gov.au/laws-and-compliance/codes-of-practice>

Safe Work Australia Links

Law and Regulation (All States): <https://www.safeworkaustralia.gov.au/law-and-regulation>

Model Codes of Practice: <https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice>

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work

South Australia

Work Health and Safety Act 2012 (SA)

Work Health and Safety Regulations 2012 (SA)

Legislation for SA: <https://www.safework.sa.gov.au/resources/legislation>

Codes of Practice for SA: <https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs>

Tasmania

Work Health and Safety Act 2012

Work Health and Safety (Transitional and Consequential Provisions) Act 2012

Work Health and Safety Regulations 2012

Work Health and Safety (Transitional) Regulations 2012

Legislation for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations>

Codes of Practice for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice>

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.